1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Number A526352
EC-No 201-134-4
CAS-No 78-70-6
FEMA Numbers 2635

Manufacturer C & A Service Inc. as agents for Citrus and Allied Essences, Ltd
4620 Mercedes Drive
Belcamp, MD 21017
(410) 273-9500

Product name LINALOOL (MIN. 50% D’LINALOOL) (BIO-SENSORY TYPE) EPA NO. 70909-2
Pure substance/mixture Substance
Formula C10H18O

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use No information available

1.3. Details of the supplier of the safety data sheet

For further information, please contact:

E-mail Address dchristopher@candaserviceinc.com

1.4. Emergency telephone number

Emergency telephone Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 5</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 4</td>
</tr>
</tbody>
</table>

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

Symbol(s)

Xi - Irritant

R-code(s)

Xi;R38
2.2. Label elements

Signal Word
Warning

H227 - Combustible liquid

Precautionary Statements
P321 - Specific treatment (see .? on this label)
P403 + P235 - Store in a well-ventilated place. Keep cool
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/ eye protection/ face protection

2.3. Other information

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Alternate CAS #</th>
<th>Weight %</th>
<th>Classification according to Directive 67/548/EEC or 1999/45/EC</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINALOOL</td>
<td>201-134-4</td>
<td>78-70-6</td>
<td></td>
<td>90-100%</td>
<td>XI; R38</td>
<td>Aquatic Acute 3 (H402) Skin Irrit. 2 (H316)  Acute Tox. 5 (H303) Flam. Liq. 4 (H227)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1. Description of first aid measures

General advice
If symptoms persist, call a physician

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes If symptoms persist, call a physician Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes Keep eye wide open while rinsing

Skin contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion
Immediate medical attention is not required. Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Inhalation
Move to fresh air. If symptoms persist, call a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. Move to fresh air in case of accidental inhalation of vapors or decomposition products.

Self-protection of the first aider
Use personal protective equipment

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians  Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use Dry chemical Carbon dioxide CO₂ Water spray Alcohol-resistant foam

Extinguishing media which shall not be used for safety reasons
No information available

5.2. Special hazards arising from the substance or mixture

Special Hazard
None

5.3. Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid contact with eyes and skin. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges.

See Section 12 for additional Ecological Information

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation. Use personal protective equipment as required. Use only in area provided with appropriate exhaust ventilation. Do not breathe dust/fume/gas/mist/vapors/spray. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from heat, sparks and open flame. No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

7.2. Conditions for safe storage, including any incompatibilities

7.3 Specific end use(s)

Exposure scenario N/A
Other Guidelines N/A

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) No information available
Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Engineering Controls Ensure adequate ventilation, especially in confined areas

Personal protective equipment
Eye Protection Tightly fitting safety goggles
Hand Protection Protective gloves
Skin and body protection Long sleeved clothing Apron Impervious gloves Chemical resistant apron Antistatic boots
Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

General Hygiene Considerations When using, do not eat, drink or smoke Wash contaminated clothing before reuse Provide regular cleaning of equipment, work area and clothing

Environmental Exposure Controls Do not allow material to contaminate ground water system
9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>light refreshing floral woody</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>clear</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>20 °C / 68 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/bolling range</td>
<td>198 °C / 388 °F</td>
<td>FCC Method</td>
</tr>
<tr>
<td>Flash Point</td>
<td>71 °C / 160 °F</td>
<td>Closed cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lower flammability limit</td>
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<td></td>
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<tr>
<td>Vapor pressure mm Hg 20°C</td>
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<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity @ 25C</td>
<td>0.858 - 0.867</td>
<td>FCC Method</td>
</tr>
<tr>
<td>Specific Gravity @ 20C</td>
<td>0.861 - 0.87</td>
<td>FCC Method</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1.461 - 1.465</td>
<td>FCC Method</td>
</tr>
<tr>
<td>Water solubility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information

Molecular Weight 154.25

10. STABILITY AND REACTIVITY

10.1. Reactivity

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Heat, flames and sparks

10.5. Incompatible materials

No materials to be especially mentioned

10.6. Hazardous decomposition products

None under normal use conditions

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Acute toxicity

Product Information

Product does not present an acute toxicity hazard based on known or supplied information.

Inhalation

There is no data available for this product

Eye contact

There is no data available for this product

Skin contact

There is no data available for this product

Ingestion

There is no data available for this product

Acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

Oral

2,876.29

Dermal

5,783.51

Gas

99,999.00

Mist

99,999.00

Vapor

99,999.00

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINALOOL</td>
<td>2790 mg/kg (Rat)</td>
<td>5610 mg/kg (Rat)</td>
<td></td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

No information available

Eye damage/irritation

No information available

Sensitization

No information available

Germ Cell Mutagenicity

No information available

Carcinogenicity

No information available

Specific target organ systemic toxicity (single exposure)

No information available

Specific target organ systemic toxicity (repeated exposure)

No information available

Target Organ Effects

No information available

Aspiration hazard

No information available

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINALOOL</td>
<td>88.3: 96 h Desmodesmus subspicatus mg/L EC50</td>
<td>22-46: 96 h Leuciscus idus mg/L LC50 static</td>
<td>20: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential
12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products
Dispose of in accordance with local regulations

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal

Other Information
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used

14. TRANSPORT INFORMATION

DOT
Not regulated

IMDG / IMO
Not regulated

ICAO/IATA
Not regulated

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

WGK Classification

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINALOOL</td>
<td>Hazard Class 1</td>
</tr>
</tbody>
</table>

International Inventories
All of the components in the product are on the following Inventory lists: No information available, United States of America (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

<table>
<thead>
<tr>
<th>TSCA</th>
<th>Complies</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS/ELINCS</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Complies</td>
</tr>
<tr>
<td>PICCS</td>
<td>Complies</td>
</tr>
</tbody>
</table>
15.2. Chemical safety assessment

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H402 - Harmful to aquatic life H316 - Causes mild skin irritation H303 - May be harmful if swallowed H227 - Combustible liquid

Revision Date 19-May-2015
Revision Note Not applicable.
Revision# 1

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

WARNING/DISCLAIMER:
This ingredient(s) has not been tested, nor has it been deemed safe, for inhalation or use in electronic smoking devices electronic nicotine delivery systems, electronic cigarettes or other similar devices (collectively "E-Cigarettes"). In supplying this ingredient, Citrus and Allied instructs, and by receiving this ingredient recipient confirms, that this ingredient will not be used in connection with the manufacture and distribution of E-Cigarettes or any component thereof.

Disclaimer
The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.